U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
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Walker Lake
Mineral County
Nevada

National Eutrophication Survey, Las Vegas, Nev

Prepared for

Environmental Monitoring and Support Lab, Las Vegas, Nev

Sep 77

TECHNICAL REPORT DATA
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16. ABSTRACT

Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

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PB 282 339

U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL EUTROPHICATION SURVEY

WORKING PAPER SERIES

REPORT

ON

WALKER LAKE

MINERAL COUNTY

NEVADA

EPA REGION IX

WORKING PAPER No. 813

CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY - CORVALLIS, OREGON

and

ENVIRONMENTAL MONITORING & SUPPORT LABORATORY - LAS VEGAS, NEVADA

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REPORT

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WITH THE COOPERATION OF THE

NEVADA ENVIRONMENTAL PROTECTION SERVICE

AND THE

NEVADA NATIONAL GUARD

SEPTEMBER, 1977

REPORT ON WALKER LAKE

MINERAL COUNTY, NEVADA

EPA REGION IX

by

National Eutrophication Survey

Water and Land Quality Branch
Monitoring Operations Division
Environmental Monitoring & Support Laboratory
Las Vegas, Nevada

and

Special Studies Branch
Corvallis Environmental Research Laboratory
Corvallis, Oregon

Working Paper No. 813

OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY

September 1977

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to freshwater lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point source discharge reduction and nonpoint source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's freshwater lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by the U.S. Environmental Protection Agency and to augment plans implementation by the States.

ACKNOWLEDGMENTS

The staff of the National Eutrophication Survey (Office of Research and Development, U.S. Environmental Protection Agency) expresses sincere appreciation to the Nevada State Environmental Protection Service for professional involvement, to the Nevada National Guard for conducting the tributary sampling phase of the Survey, and to those Nevada wastewater treatment plant operators who provided effluent samples and flow data.

The staff of the Department of Conservation and Natural Resources, Division of Environmental Protection, State Environmental Protection Service provided invaluable lake documentation and counsel during the Survey, reviewed the preliminary reports and provided critiques most useful in the preparation of this Working Paper Series.

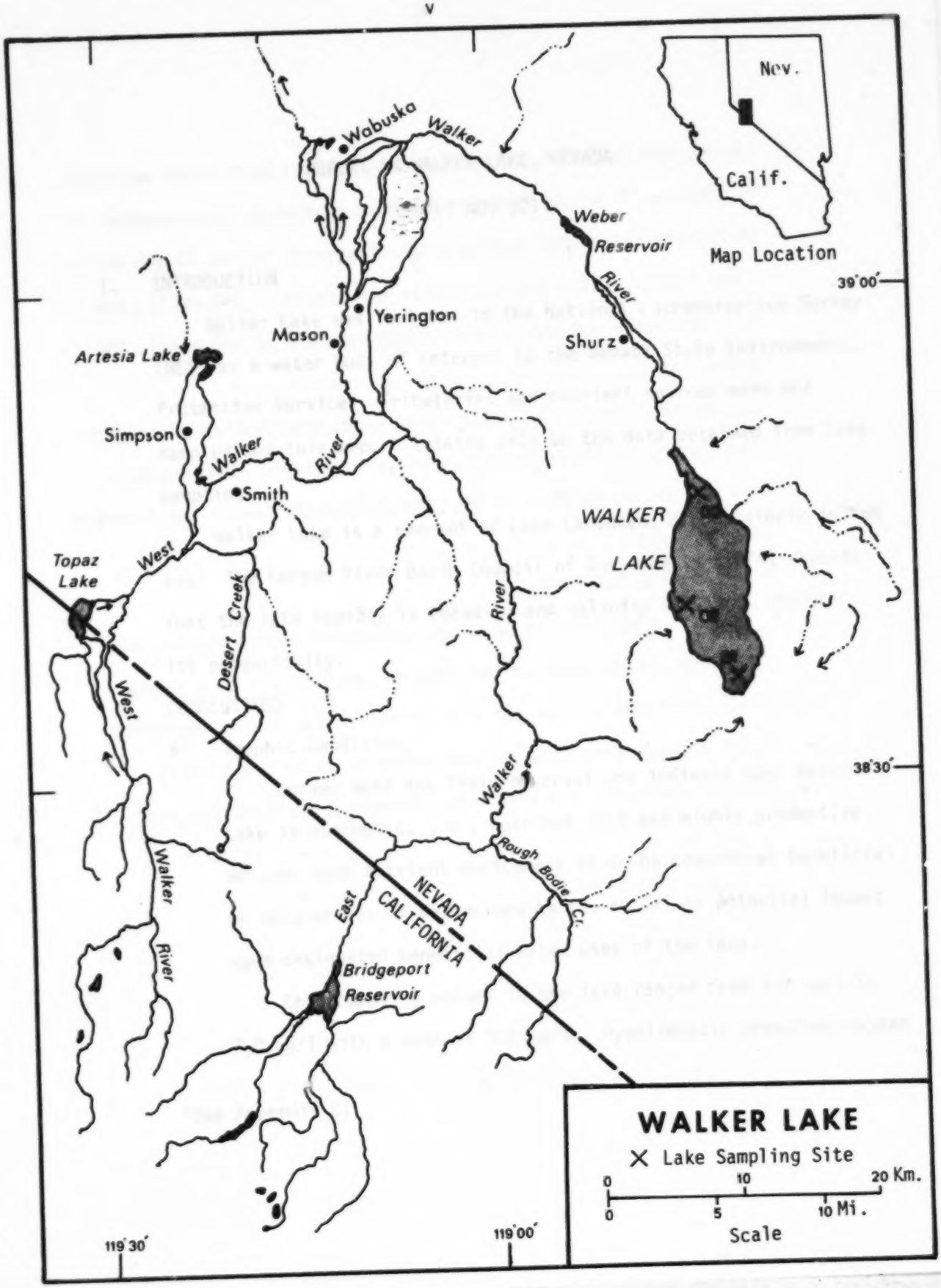
Major General Floyd L. Edsall, the Adjutant General of Nevada, and Project Officer Major Harold E. Roberts, who directed the volunteer efforts of the Nevada National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF NEVADA

LAKE NAME	COUNTY
Lake Mead	Clark (Mohave in Arizona)
Lahontan Reservoir	Lyon, Churchill
Rye Patch Reservoir	Pershing
Lake Tahoe	Washoe, Carson City, Douglas (Placer, El Dorado in CA)
Topaz Reservoir	Douglas (Mono in CA)
Upper Pahranagat Lake	Lincoln
Washoe Lake	Washoe
Wildhorse Reservoir	Elko
Wilson Reservoir	Elko
Walker Lake	Mineral


Nev.
Calif.
Map Location
Wabuska
Walker
Weber
Reservoir
River
39°00'
Yerington
Mason
Shurz
Artesia Lake
Simpson
Walker
River
Smith
WALKER
LAKE
Topaz
Lake
West
Desert Creek
River
West
38°30'
Walker
Rough
Bodie Ck.
Walker
River
East
NEVADA
CALIFORNIA
Bridgeport
Reservoir
119°30'
119°00'
WALKER LAKE
X Lake Sampling Site
0
10
20 Km.
0
5
10 Mi.
Scale

REPORT ON WALKER LAKE, NEVADA

STORET NO. 3211

I. INTRODUCTION

Walker Lake was included in the National Eutrophication Survey (NES) as a water body of interest to the Nevada State Environmental Protection Service. Tributaries and nutrient sources were not sampled and this report relates only to the data obtained from lake sampling.

Walker Lake is a remnant of Lake Lahontan, a prehistoric inland sea. The Carson River Basin Council of Governments (1974) reports that the lake rapidly is receding and salinity will soon destroy its productivity.

II. CONCLUSIONS

A. Trophic Condition:*

Survey data and field observations indicate that Walker Lake is eutrophic, i.e., nutrient rich and highly productive. Whether such nutrient enrichment is to be considered beneficial or deleterious is determined by its actual or potential impact upon designated beneficial water uses of the lake.

Chlorophyll *a* values in the lake ranged from 1.2 µg/l to 7.0 µg/l with a mean of 3.4 µg/l. Hypolimnetic dissolved oxygen

*See Appendix C.

levels were depleted and hydrogen sulfide production was detected at Station 02 during November. Of the 10 Nevada lakes sampled in 1975, none had higher median total phosphorus values (0.602 mg/l), 7 had higher median inorganic nitrogen levels (0.080 mg/l), and none had higher median orthophosphorus values (0.574 mg/l), than Walker Lake.

Survey limnologists noted some algal growth along the shoreline during the March sampling date and reported algal blooms over the entire surface of the lake during the August and November sampling times.

B. Rate-Limiting Nutrient:

Algal assay results were not considered representative of conditions in the lake at the time of sampling due to a change in nutrient levels from the time of collection to the beginning of the assay. Lake data suggest nitrogen to be the primary limiting nutrient in Walker Lake throughout the sampling year.

III. LAKE CHARACTERISTICS

A. Lake Morphometry:*

1. Surface area: 153.78 km^2.
2. Mean depth: 24.1 meters.
3. Maximum depth: 35.0 meters.
4. Volume: 3,700.470 x 10^6 m^3.

B. Precipitation:

1. Year of sampling: 8.5 cm.
2. Mean annual: 10.7 cm.

*James B. Williams, Jr. (personal communication).

IV. LAKE WATER QUALITY SUMMARY

Walker Lake was sampled three times during the open-water season of 1975 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from three stations on the lake and from a number of depths at each station (see map, page v). During each visit, depth-integrated samples were collected from each station for chlorophyll a analysis and phytoplankton identification and enumeration. During the first and last visits, 18.9-liter depth-integrated samples were composited for algal assays. Maximum depths sampled were 14.6 meters at Station 01, 30.8 meters at Station 02, and 14.6 meters at Station 03. For a more detailed explanation of NES methods, see NES Working Paper No. 175.

The results obtained are presented in full in Appendix B and are summarized in III-A for waters at the surface and at the maximum depth for each site. Results of the phytoplankton counts and chlorophyll a determinations are included in III-B. Results of the limiting nutrient study are presented in III-C.

CODE 3211

PHYSICAL AND CHEMICAL CHARACTERISTICS

PARAMETER	N*	(3/11/75) S*** = 3 RANGE	MEDIAN	MAX DEPTH RANGE (METERS)	N*	(7/11/75) S*** = 3 RANGE	MEDIAN	MAX DEPTH RANGE (METERS)	N*	(11/ 6/75) S*** = 3 RANGE	MEDIAN	MAX DEPTH RANGE (METERS)
TEMPERATURE (DEG CENT)												
0.-1.5 M DEPTH	6	4.7- 5.2	4.8	0.0- 1.5	6	19.2- 23.0	20.8	0.0- 1.5	6	14.4- 14.6	14.5	0.0- 1.5
MAX DEPTH**	3	4.7- 5.1	4.7	11.0- 30.8	3	8.4- 17.0	12.6	7.0- 24.7	3	11.6- 14.5	14.4	10.4- 30.5
DISSOLVED OXYGEN (MG/L)												
0.-1.5 M DEPTH	6	3.0- 7.6	6.0	0.0- 1.5	6	4.2- 7.8	7.2	0.0- 1.5	6	5.0- 6.8	6.3	0.0- 1.5
MAX DEPTH**	3	4.0- 5.4	4.8	11.0- 30.8	3	2.4- 4.6	4.4	7.0- 24.7	3	0.0- 6.2	6.0	10.4- 30.5
CONDUCTIVITY (UMHOS)												
0.-1.5 M DEPTH	6	7180.-7182.	7182.	0.0- 1.5	4	7092.-7095.	7093.	0.0- 1.5	6	7067.-7079.	7078.	0.0- 1.5
MAX DEPTH**	3	7181.-7182.	7182.	11.0- 30.8	2	7097.-7101.	7099.	14.6- 24.7	3	7069.-7079.	7075.	10.4- 30.5
PH (STANDARD UNITS)												
0.-1.5 M DEPTH	6	9.4- 9.5	9.5	0.0- 1.5	6	9.4- 9.5	9.5	0.0- 1.5	6	9.3- 9.4	9.4	0.0- 1.5
MAX DEPTH**	3	9.4- 9.5	9.5	11.0- 30.8	3	9.4- 9.5	9.5	7.0- 24.7	3	9.4- 9.4	9.4	10.4- 30.5
TOTAL ALKALINITY (MG/L)												
0.-1.5 M DEPTH	6	3360.-4000.	3720.	0.0- 1.5	6	3480.-5440.	3880.	0.0- 1.5	6	3040.-4680.	3670.	0.0- 1.5
MAX DEPTH**	3	3640.-3920.	3720.	11.0- 30.8	3	3540.-3760.	3580.	7.0- 24.7	3	2480.-5360.	4280.	10.4- 30.5
TOTAL P (MG/L)												
0.-1.5 M DEPTH	6	0.580-0.642	0.615	0.0- 1.5	6	0.518-0.556	0.527	0.0- 1.5	6	0.558-0.620	0.599	0.0- 1.5
MAX DEPTH**	3	0.602-0.632	0.614	11.0- 30.8	3	0.526-0.648	0.614	7.0- 24.7	3	0.572-0.740	0.612	10.4- 30.5
DISSOLVED ORTHO P (MG/L)												
0.-1.5 M DEPTH	6	0.576-0.610	0.600	0.0- 1.5	6	0.458-0.512	0.486	0.0- 1.5	1	0.672-0.672	0.672	0.0- 0.0
MAX DEPTH**	3	0.596-0.612	0.604	11.0- 30.8	3	0.506-0.574	0.534	7.0- 24.7	0	*****-*****	*****	*****-*****
NO2+NO3 (MG/L)												
0.-1.5 M DEPTH	6	0.040-0.060	0.050	0.0- 1.5	6	0.020-0.040	0.030	0.0- 1.5	6	0.020-0.020	0.020	0.0- 1.5
MAX DEPTH**	3	0.050-0.060	0.050	11.0- 30.8	3	0.020-0.030	0.030	7.0- 24.7	3	0.020-0.020	0.020	10.4- 30.5
AMMONIA (MG/L)												
0.-1.5 M DEPTH	6	0.020-0.040	0.030	0.0- 1.5	6	0.030-0.060	0.035	0.0- 1.5	6	0.020-0.070	0.060	0.0- 1.5
MAX DEPTH**	3	0.020-0.040	0.030	11.0- 30.8	3	0.060-0.170	0.070	7.0- 24.7	3	0.020-0.060	0.060	10.4- 30.5
KJELDAHL N (MG/L)												
0.-1.5 M DEPTH	6	1.600-3.500	2.150	0.0- 1.5	6	1.800-2.500	2.200	0.0- 1.5	6	1.600-2.000	1.800	0.0- 1.5
MAX DEPTH**	3	2.100-2.300	2.200	11.0- 30.8	3	2.000-2.500	2.400	7.0- 24.7	3	1.800-2.400	2.000	10.4- 30.5
SECCHI DISC (METERS)												
	3	2.1- 2.4	2.1		3	0.4- 1.8	1.7		3	3.2- 3.7	3.7	

* N = NO. OF SAMPLES
** MAXIMUM DEPTH SAMPLED AT EACH SITE
*** S = NO. OF SITES SAMPLED ON THIS DATE

B. Biological Characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera	Algal Units Per ml
03/17/75	1. Pennate diatom	27
	2. Chroomonas?	16
	3. Tetraedron	5
	Other genera	---
	Total	48
07/09/75	1. Chroococcus	19
	Other genera	---
	Total	19
11/06/75	1. Navicula	6
	Other genera	---
	Total	6

2. Chlorophyll *a* -

Sampling Date	Station Number	Chlorophyll *a* (µg/l)
03/17/75	01	2.8
	02	2.5
	03	2.5
07/09/75	01	1.2
	02	1.7
	03	3.6
11/06/75	01	7.0
	02	4.6
	03	4.9

C. Limiting Nutrient Study:

The algal assay results are not considered representative of the conditions in the lake at the time of sampling due to a change in nutrient levels from the time of collection to the beginning of the assay.

The mean inorganic nitrogen to orthophosphorus ratios (N/P) in the lake data were less than 1/1 on the three sampling dates suggesting primary limitation by nitrogen (a mean N/P ratio of 14/1 or greater generally reflects nitrogen limitation).

V. LITERATURE REVIEWED

Carson River Basin Council of Governments. 1974. Regional Water Quality Plan, Phase I, Existing Conditions, Walker River Basin, Carson City, Nevada.

U.S. Environmental Protection Agency. 1975. National Eutrophication Survey Methods 1973-1976. Working Paper No. 175. National Environmental Research Center, Las Vegas, Nevada, and Pacific Northwest Environmental Research Laboratory, Corvallis, Oregon.

Williams, James B., Jr. 1974. Personal communication. Department of Human Resources. Carson City, Nevada

VI. APPENDICES

APPENDIX A

CONVERSION FACTORS

CONVERSION FACTORS

Hectares x 2.471 = acres

Kilometers x 0.6214 = miles

Meters x 3.281 = feet

Cubic meters x 8.107×10^{-4} = acre/feet

Square kilometers x 0.3861 = square miles

Cubic meters/sec x 35.315 = cubic feet/sec

Centimeters x 0.3937 = inches

Kilograms x 2.205 = pounds

Kilograms/square kilometer x 5.711 = lbs/square mile

APPENDIX B

PHYSICAL AND CHEMICAL DATA

STORET RETRIEVAL DATE 77/01/26
NATL EUTROPHICATION SURVEY
EPA-LAS VEGAS

321101
38 35 45.0 118 41 00.0 4
WALKER LAKE
32021 NEVADA

150191

/TYPA/AMBNT/LAKE

11EPALES 04001002
0040 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
75/03/17	10 45	0000	5.2	6.8	84	7182	9.40	3360	0.020	2.000	0.040	0.576
	10 45	0005	5.2	5.4		7182	9.45	3520	0.020	1.600	0.040	0.610
	10 45	0010	5.2	4.6		7182	9.50	3740	0.020	1.600	0.040	0.574
	10 45	0022	5.2	6.6		7182	9.50	3780	0.030	1.900	0.050	0.574
	10 45	0036	5.1	4.8		7182	9.50	3640	0.020	2.200	0.050	0.604
75/07/11	10 50	0000	22.1	7.4	70	7095	9.50	3760	0.030	2.500	0.020	0.512
	10 50	0005	19.2	7.2		7093	9.50	5240	0.040	2.300	0.030	0.466
	10 50	0015	16.8			7094	9.50	3760	0.030	1.800	0.020	0.490
	10 50	0025	15.3	4.4		7095	9.50	3960	0.030	1.700	0.020K	0.490
	10 50	0048	12.6	4.6		7097	9.50	3760	0.060	2.000	0.020	0.506
75/11/06	10 20	0000	14.6	6.8	144	7075	9.30	3720	0.020K	1.700	0.020K	0.672
	10 20	0005	14.5	6.2		7077	9.40	3040	0.050	1.800	0.020K	
	10 20	0015	14.5	6.4		7075	9.40	3820	0.020K	1.600	0.020K	
	10 20	0034	14.5	6.2		7075	9.40	2480	0.060	1.800	0.020K	

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L	00031 INCDT LT REMNING PERCENT
75/03/17	10 45	0000	0.580	2.8	
	10 45	0005	0.624		
	10 45	0010	0.584		
	10 45	0022	0.576		
	10 45	0036	0.632		
75/07/11	10 50	0000	0.530	1.2	
	10 50	0005	0.518		
	10 50	0015	0.522		
	10 50	0025	0.528		
	10 50	0048	0.526		
75/11/06	10 20	0000	0.592	7.0	
	10 20	0005	0.558		
	10 20	0015	0.606		
	10 20	0034	0.572		

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 77/01/26
NATL EUTROPHICATION SURVEY
EPA-LAS VEGAS

321102
38 39 10.0 118 44 35.0 4
WALKER LAKE
32021 NEVADA

150191

/TYPA/AMBNT/LAKE

11EPALES 04001002
0105 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
75/03/17	11 30	0000	4.8	7.6	96	7181	9.50	3600	0.040	3.500	0.050	0.598
	11 30	0005	4.8	3.6		7182	9.50	4000	0.030	2.700	0.060	0.590
	11 30	0025	4.7	4.6		7182	9.50	3980	0.030	2.500	0.050	0.600
	11 30	0060	4.7	6.6		7182	9.50	3920	0.030	2.500	0.060	0.564
	11 30	0101	4.7	4.0		7182	9.50	3720	0.040	2.300	0.060	0.612
75/07/11	10 20	0000	21.5	7.8	68	7092	9.40	3760	0.030	1.900	0.020	0.480
	10 20	0005	19.9	7.2		7093	9.40	3480	0.040	1.800	0.030	0.512
	10 20	0015	18.1	6.0		7093	9.40	3700	0.040	2.000	0.020	0.518
	10 20	0025	16.4	6.4		7095	9.40	3040	0.030	1.900	0.030	0.508
	10 20	0050	11.4	4.0		7098	9.40	3700	0.050	2.200	0.030	0.582
	10 20	0081	8.4	2.4		7101	9.40	3540	0.170	2.500	0.030	0.574
75/11/06	09 55	0000	14.6	6.4	144	7079	9.40	4680	0.060	2.000	0.020K	
	09 55	0005	14.6	6.4		7079	9.40	3620	0.060	2.000	0.020K	
	09 55	0027	14.5	6.4		7079	9.40	5080	0.060	2.000	0.020K	
	09 55	0065	14.9	5.6		7079	9.40	3660	0.050	1.800	0.020K	
	09 55	0100	11.6	0.0		7079	9.40	4280	0.020K	2.000	0.020K	

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L	00031 INCDT LT RFMNING PERCENT
75/03/17	11 30	0000	0.606	2.5	
	11 30	0005	0.602		
	11 30	0025	0.600		
	11 30	0060	0.698		
	11 30	0101	0.614		
75/07/11	10 20	0000	0.524	1.7	
	10 20	0005	0.520		
	10 20	0015	0.526		
	10 20	0025	0.530		
	10 20	0050	0.576		
	10 20	0081	0.614		
75/11/06	09 55	0000	0.610	4.6	
	09 55	0005	0.606		
	09 55	0027	0.628		
	09 55	0065	0.606		
	09 55	0100	0.740		

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 77/01/26
NATL EUTROPHICATION SURVEY
EPA-LAS VEGAS

321103
38 45 15.0 118 43 25.0 4
WALKER LAKE
32021 NEVADA

150191

/TYPA/AMBNT/LAKE

11EPALES 04001002
0043 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
75/03/17	12 15	0000	4.7	3.0	84	7180	9.50	3840	0.030	2.300	0.060	0.608
	12 15	0005	4.7	6.6		7182	9.50	3840	0.030	1.700	0.050	0.602
	12 15	0022	4.7	7.0		7181	9.50	3640	0.040	1.900	0.060	0.586
	12 15	0039	4.7	5.4		7181	9.45	3920	0.030	2.100	0.050	0.596
75/07/09	15 15	0000	23.0	4.2	36		9.50	4000	0.030	2.100	0.030	0.458
	15 15	0005	20.0	6.4			9.50	5440	0.060	2.400	0.040	0.492
	15 15	0015	17.0	6.2			9.50	5360	0.120	4.000	0.040	0.500
	15 15	0023	17.0	4.4			9.50	3580	0.070	2.400	0.030	0.534
75/11/06	09 25	0000	14.4	6.0	126	7067	9.40	3540	0.060	1.600	0.020K	
	09 25	0005	14.4	5.0		7079	9.40	3760	0.070	1.800	0.020K	
	09 25	0015	14.4	5.6		7079	9.40	3740	0.050	2.200	0.020K	
	09 25	0030	14.4	5.2		7079	9.40	3600	0.060	2.600	0.020K	
	09 25	0048	14.4	6.0		7069	9.40	5360	0.060	2.400	0.020K	

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L	00031 INCDT LT REMNING PERCENT
75/03/17	12 15	0000	0.628	2.5	
	12 15	0005	0.642		
	12 15	0022	0.598		
	12 15	0039	0.602		
75/07/09	15 15	0000	0.556	3.6	
	15 15	0005	0.550		
	15 15	0015	0.676		
	15 15	0023	0.648		
75/11/06	09 25	0000	0.590	4.9	
	09 25	0005	0.620		
	09 25	0015	0.614		
	09 25	0030	0.602		
	09 25	0048	0.612		

K VALUE KNOWN TO BE LESS
THAN INDICATED

APPENDIX C

PARAMETRIC RANKINGS OF LAKES
SAMPLED BY NES IN 1975

STATE OF NEVADA

Mean or median values for six of the key parameters evaluated in establishing the trophic conditions of Nevada lakes sampled are presented to allow direct comparison of the ranking, by parameter, of each lake relative to the others. Median total phosphorus, median inorganic nitrogen and median dissolved orthophosphorus levels are expressed in mg/l. Chlorophyll a values are expressed in µg/l. To maintain consistent rank order with the preceding parameters, the mean Secchi disc depth, in inches, is subtracted from 500. Similarly, minimum dissolved oxygen values are subtracted from 15 to create table entries.

LAKE DATA TO BE USED IN RANKINGS

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P
3201	LAKE MEAD	0.016	0.340	266.565	3.111	11.400	0.005
3202	LAHONTAN RESERVOIR	0.198	0.350	472.083	4.608	10.400	0.148
3204	RYE PATCH RESERVOIR	0.094	0.050	467.750	4.938	10.000	0.039
3205	LAKE TAHOE	0.005	0.040	-3.269	0.571	10.200	0.003
3206	TOPAZ RESERVOIR	0.057	0.165	376.000	7.517	14.600	0.041
3207	UPPER PAHRANGAT LAKE	0.173	0.125	470.000	---	3.600	0.026
3208	WASHOE LAKE	0.403	0.130	494.555	11.633	7.200	0.268
3209	WILD HORSE RESERVOIR	0.114	0.320	489.400	75.530	14.600	0.065
3210	WILSON RESERVOIR	0.049	0.120	197.333	10.033	11.400	0.016
3211	WALKER LAKE	0.602	0.080	405.333	3.422	15.000	0.574

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P
3201	LAKE MEAD	89 (8)	11 (1)	78 (7)	88 (7)	39 (3)	89 (8)
3202	LAHONTAN RESERVOIR	22 (2)	0 (0)	22 (2)	63 (5)	56 (5)	22 (2)
3204	RYE PATCH RESERVOIR	56 (5)	89 (8)	44 (4)	50 (4)	78 (7)	56 (5)
3205	LAKE TAHOE	100 (9)	100 (9)	100 (9)	100 (8)	67 (6)	100 (9)
3206	TOPAZ RESERVOIR	67 (6)	33 (3)	67 (6)	38 (3)	17 (1)	44 (4)
3207	UPPER PAHRANAGAT LAKE	33 (3)	56 (5)	33 (3)	---	89 (8)	67 (6)
3208	WASHOE LAKE	11 (1)	44 (4)	0 (0)	13 (1)	100 (9)	11 (1)
3209	WILD HORSE RESERVOIR	44 (4)	22 (2)	11 (1)	0 (0)	17 (1)	33 (3)
3210	WILSON RESERVOIR	78 (7)	67 (6)	89 (8)	25 (2)	39 (3)	78 (7)
3211	WALKER LAKE	0 (0)	78 (7)	56 (5)	75 (6)	0 (0)	0 (0)